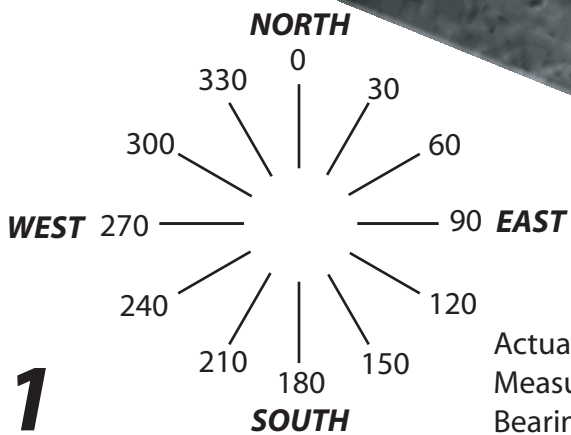
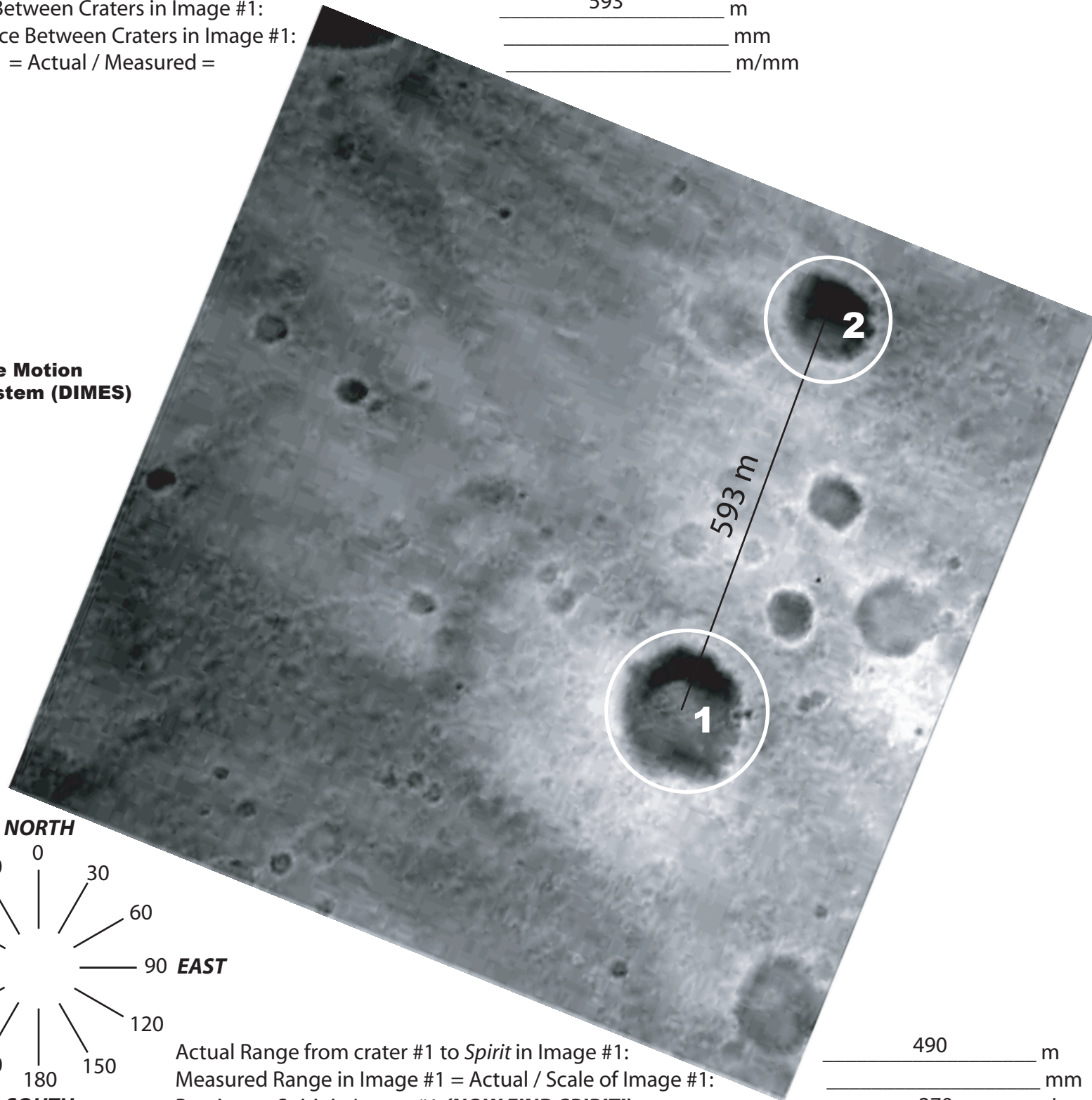


Actual Distance Between Craters in Image #1:  
Measured Distance Between Craters in Image #1:  
Scale of Image #1 = Actual / Measured =

\_\_\_\_\_ 593 \_\_\_\_\_ m  
\_\_\_\_\_ mm  
\_\_\_\_\_ m/mm

**Descent Image Motion  
Estimation System (DIMES)**



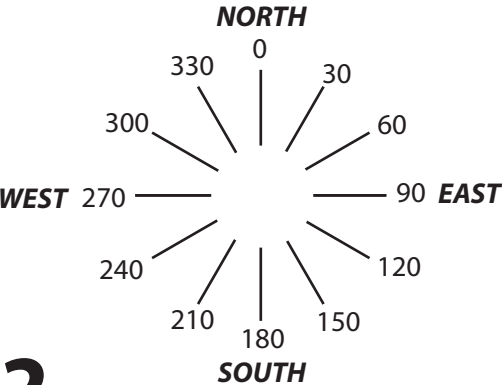
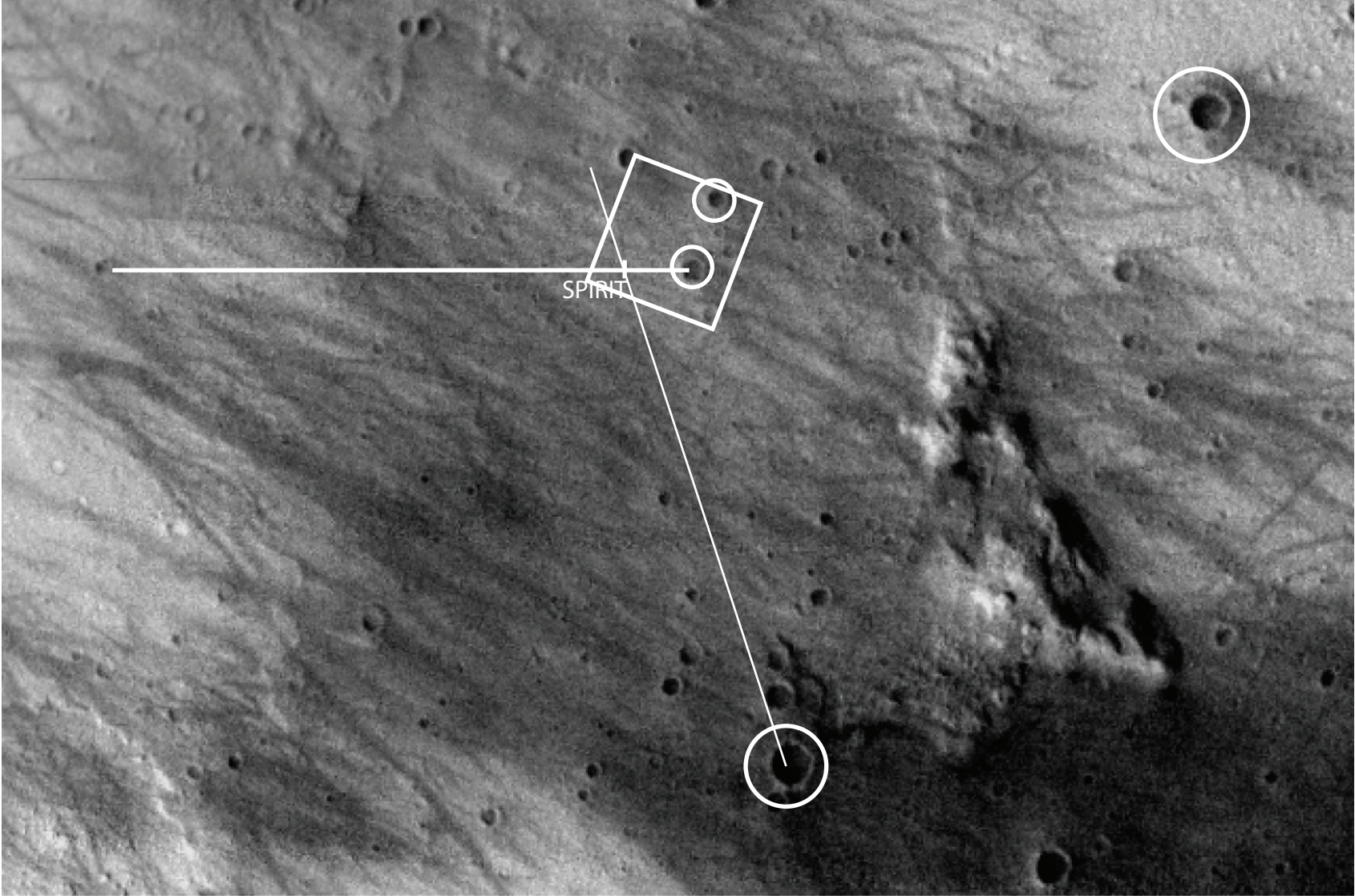
Actual Range from crater #1 to *Spirit* in Image #1:  
Measured Range in Image #1 = Actual / Scale of Image #1:  
Bearing to *Spirit* in Image #1 (**NOW FIND SPIRIT!**):

\_\_\_\_\_ 490 \_\_\_\_\_ m  
\_\_\_\_\_ mm  
\_\_\_\_\_ 270 \_\_\_\_\_ degrees



Thermal  
Emission  
Imaging  
System  
(THEMIS)

Visible  
Camera



Actual Distance Between Two Largest Craters in Image #1:	593	m
Measured Distance Between Craters in Image #2 ( <b>Circle them and measure!</b> ):	12	mm
Scale of Image #2 ( <b>Actual Distance / Measured Distance</b> ):	49.4	m/mm

**Step 1:** Find the  
Scale of the  
Current Image

Actual Range from Largest Crater in Image #1 to <i>Spirit</i> :	490	m
Measured Range in Image #2 ( <b>Actual Range / Scale of Image #2</b> ):	9.9	mm
Bearing from Crater in Image #1 to <i>Spirit</i> ( <b>NOW FIND SPIRIT!</b> ):	270	degrees

**Step 2:** Find *Spirit*  
In the Current  
Image

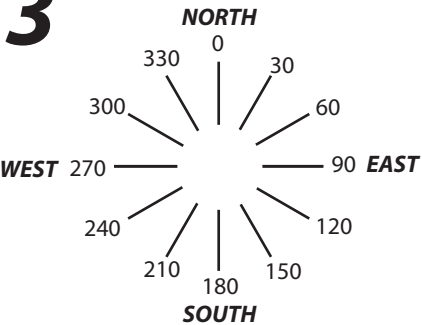
Measured Distance Between Two Largest Craters in Image #2 ( <b>Circle and measure!</b> ):	123	mm
Actual Distance ( <b>Measured Distance x Scale of Image #2</b> ):	6076	m

**Step 3:** Find Actual  
Dist. Between Two  
Largest Craters

Measured Range to <i>Spirit</i> from Largest Crater in Image #2 ( <b>Measure it!</b> ):	83	mm
Actual Range ( <b>Measured Range x Scale of Image #2</b> ) to <i>Spirit</i> :	4100	m
Bearing to <i>Spirit</i> from Largest Crater in Image #2 ( <b>Measure it!</b> ):	343	degrees

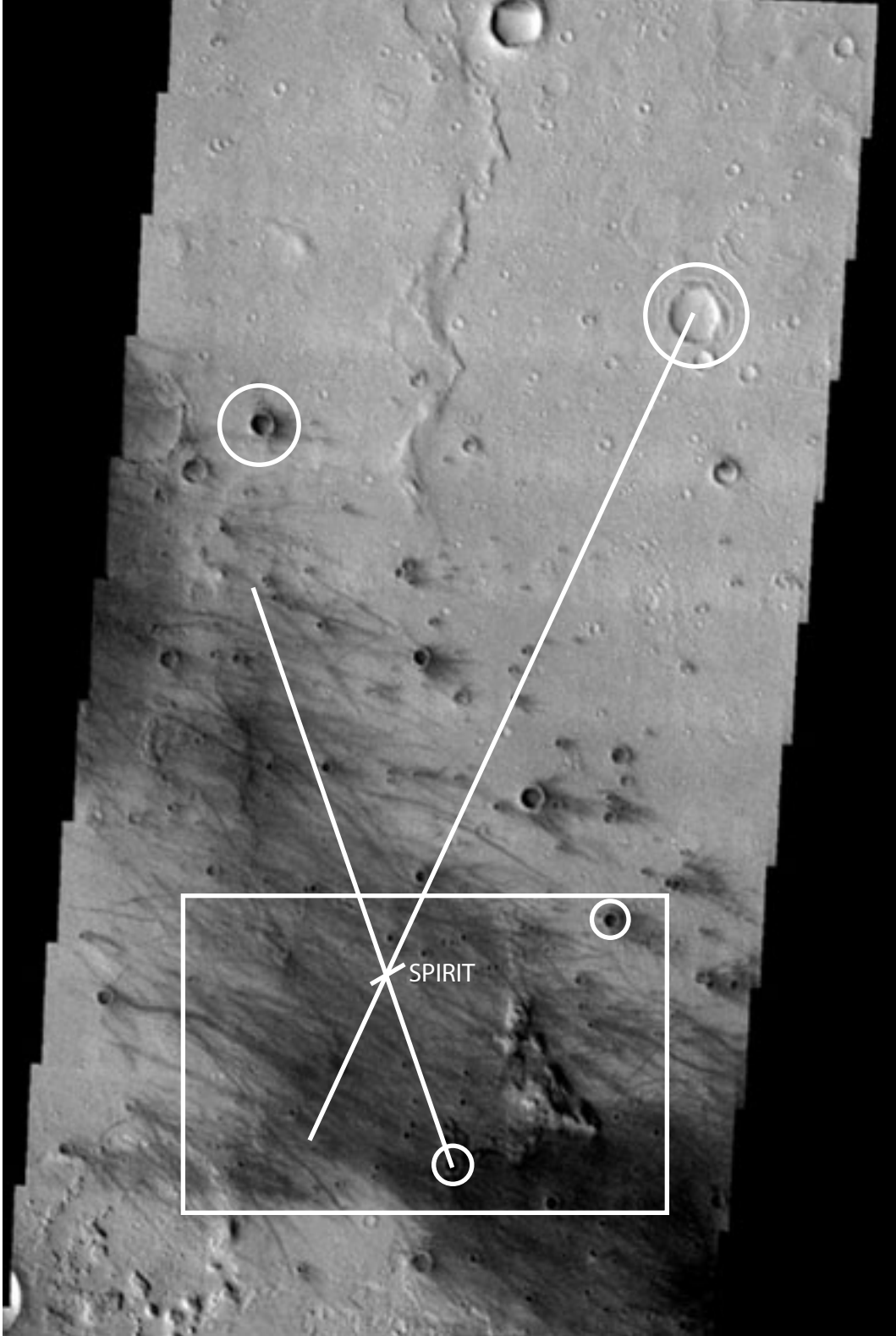
**Step 4:** Find Range  
& Bearing to *Spirit*  
From Largest Crater

# 3



**Thermal Emission Imaging System (THEMIS)**

**Visible Camera**



Actual Distance Between Two Largest Craters in Image #2:	6076	m
Measured Distance Between Craters in Image #3 ( <b>Circle them and measure!</b> ):	43	mm
Scale of Image #3 ( <b>Actual Distance / Measured Distance</b> ):	141.3	m/mm

**Step 1:** Find the Scale of the Current Image

Actual Range from Largest Crater in Image #2 to Spirit:	4100	m
Measured Range in Image #3 ( <b>Actual Range / Scale of Image #3</b> ):	29.0	mm
Bearing from Crater in Image #2 to Spirit ( <b>NOW FIND SPIRIT!</b> ):	343	degrees

**Step 2:** Find Spirit In the Current Image

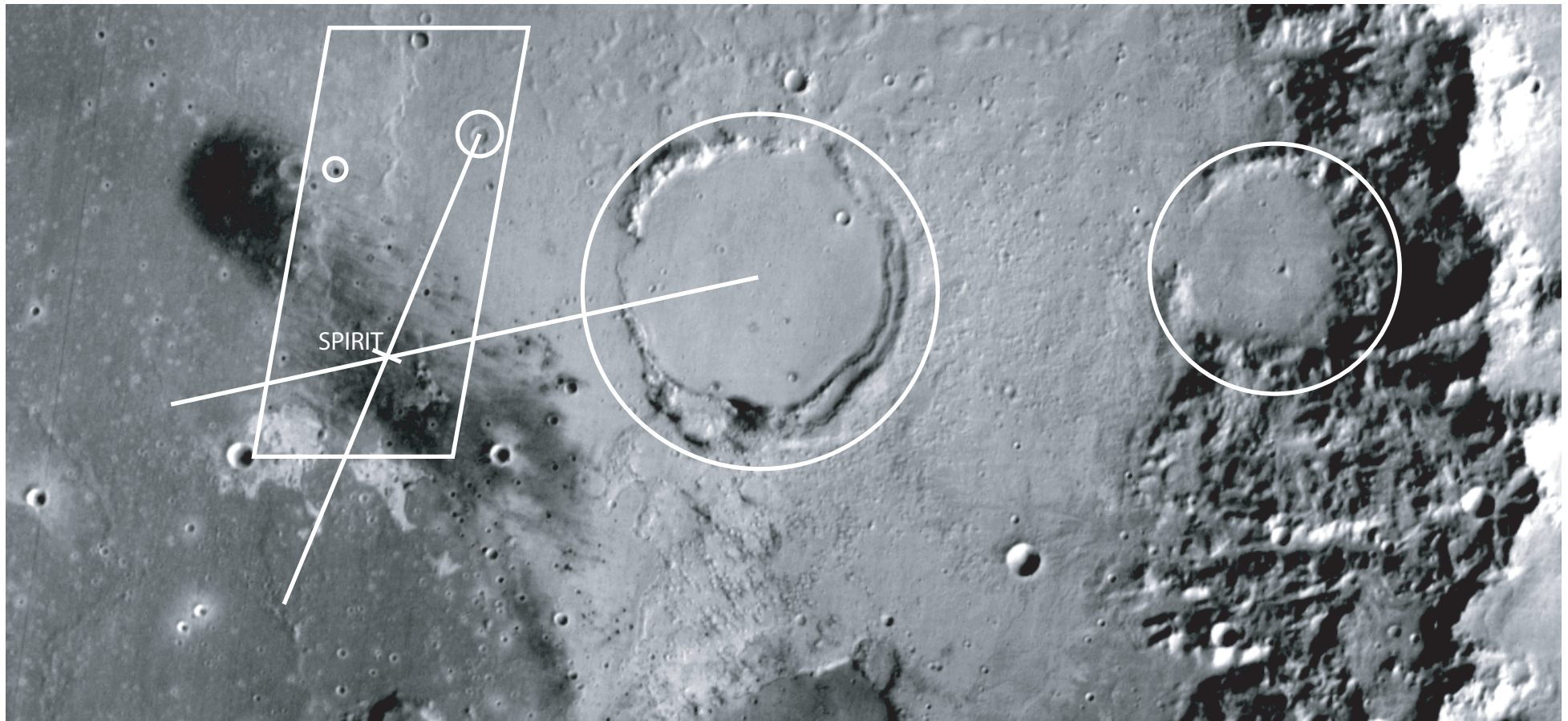
Measured Distance Between Two Largest Craters in Image #3 ( <b>Circle and measure!</b> ):	66.0	mm
Actual Distance ( <b>Measured Distance x Scale of Image #3</b> ):	9325.8	m

**Step 3:** Find Actual Dist. Between Two Largest Craters

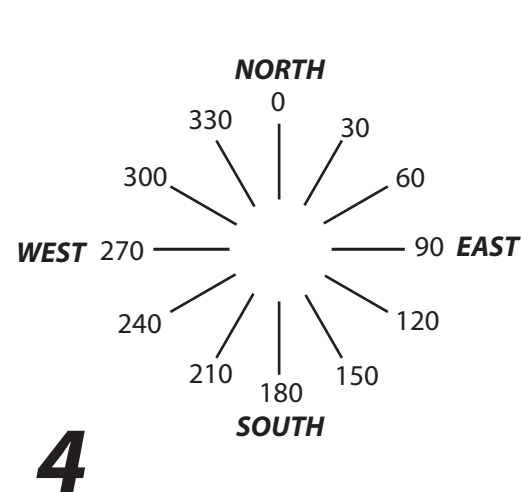
Measured Range to Spirit from Largest Crater in Image #3 ( <b>Measure it!</b> ):	108	mm
Actual Range ( <b>Measured Range x Scale of Image #3</b> ) to Spirit:	15260.4	m
Bearing to Spirit from Largest Crater in Image #3 ( <b>Measure it!</b> ):	203	degrees

**Step 4:** Find Range & Bearing to Spirit From Largest Crater





**Thermal Emission Imaging System (THEMIS)  
Infrared Camera (Colors Inverted)**



Actual Distance Between Two Largest Craters in Image #3:	<u>9325.8</u> m
Measured Distance Between Craters in Image #4 ( <b>Circle them and measure!</b> ):	<u>23</u> mm
Scale of Image #4 ( <b>Actual Distance / Measured Distance</b> ):	<u>405.5</u> m/mm

**Step 1:** Find the Scale of the Current Image

Actual Range from Largest Crater in Image #3 to <i>Spirit</i> :	<u>15260.4</u> m
Measured Range in Image #4 ( <b>Actual Range / Scale of Image #4</b> ):	<u>37.6</u> mm
Bearing from Crater in Image #3 to <i>Spirit</i> ( <b>NOW FIND SPIRIT!</b> ):	<u>203</u> degrees

**Step 2:** Find *Spirit* In the Current Image

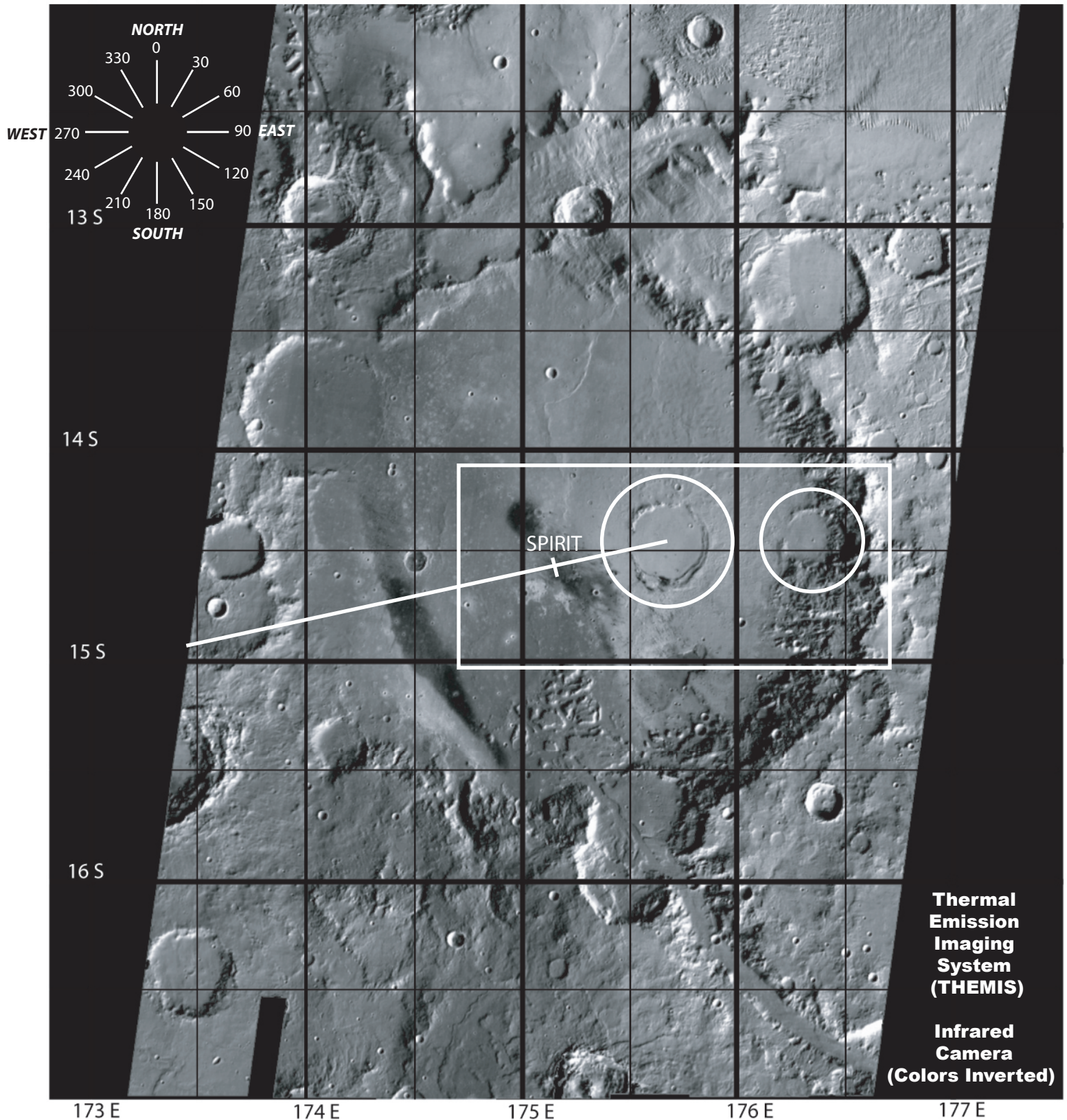
Measured Distance Between Two Largest Craters in Image #4 ( <b>Circle and measure!</b> ):	<u>80</u> mm
Actual Distance ( <b>Measured Distance x Scale of Image #4</b> ):	<u>32440</u> m

**Step 3:** Find Actual Dist. Between Two Largest Craters

Measured Range to <i>Spirit</i> from Largest Crater in Image #4 ( <b>Measure it!</b> ):	<u>61</u> mm
Actual Range ( <b>Measured Range x Scale of Image #4</b> ) to <i>Spirit</i> :	<u>24735.5</u> m
Bearing to <i>Spirit</i> from Largest Crater in Image #4 ( <b>Measure it!</b> ):	<u>258</u> degrees

**Step 4:** Find Range & Bearing to *Spirit* From Largest Crater





Actual Distance Between Two Largest Craters in Image #4:	32440	m
Measured Distance Between Craters in Image #5 ( <b>Circle them and measure!</b> ):	27	mm
Scale of Image #5 ( <b>Actual Distance / Measured Distance</b> ):	1201.5	m/mm

**Step 1:** Find the Scale of the Current Image

Actual Range from Largest Crater in Image #4 to <i>Spirit</i> :	24735.5	m
Measured Range in Image #5 ( <b>Actual Range / Scale of Image #5</b> ):	20.6	mm
Bearing from Crater in Image #4 to <i>Spirit</i> ( <b>NOW FIND SPIRIT!</b> ):	258	degrees

**Step 2:** Find *Spirit* In the Current Image

#### WHERE IS SPIRIT?

Latitude: 14.6 S degrees Longitude: 175.2 E degrees